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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
09/831,908	06/19/2001	Tetsuya Fukunaga	208555US0PCT	1916
22850	7590	03/09/2004	EXAMINER	
OBLON, SPIVAK, MCCLELLAND, MAIER & NEUSTADT, P.C. 1940 DUKE STREET ALEXANDRIA, VA 22314			LISH, PETER J	
			ART UNIT	PAPER NUMBER
			1754	

DATE MAILED: 03/09/2004

Please find below and/or attached an Office communication concerning this application or proceeding.

AS

## Office Action Summary

Application No.

09/831,908

Applicant(s)

FUKUNAGA ET AL.

Examiner

Peter J Lish

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-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

### Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

### Status

- 1) ☒ Responsive to communication(s) filed on 18 December 2003.
- 2a) ☒ This action is **FINAL**. 2b) ☐ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

### Disposition of Claims

- 4) ☒ Claim(s) 6, 8-10, 16-18, 20 and 22 is/are pending in the application.
- 4a) Of the above claim(s) \_\_\_\_\_ is/are withdrawn from consideration.
- 5) ☒ Claim(s) 22 is/are allowed.
- 6) ☒ Claim(s) 6, 8-10, 16-18, and 20 is/are rejected.
- 7) ☐ Claim(s) \_\_\_\_\_ is/are objected to.
- 8) ☐ Claim(s) \_\_\_\_\_ are subject to restriction and/or election requirement.

### Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☐ The drawing(s) filed on \_\_\_\_\_ is/are: a) ☐ accepted or b) ☐ objected to by the Examiner.  
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).  
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

### Priority under 35 U.S.C. § 119

- 12) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☐ All b) ☐ Some \* c) ☐ None of:
1. ☐ Certified copies of the priority documents have been received.
2. ☐ Certified copies of the priority documents have been received in Application No. \_\_\_\_\_.
3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).
- \* See the attached detailed Office action for a list of the certified copies not received.

### Attachment(s)

- 1) ☐ Notice of References Cited (PTO-892)
- 2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
- 3) ☐ Information Disclosure Statement(s) (PTO-1449 or PTO/SB/08)  
Paper No(s)/Mail Date \_\_\_\_\_.
- 4) ☐ Interview Summary (PTO-413)  
Paper No(s)/Mail Date. \_\_\_\_\_.
- 5) ☐ Notice of Informal Patent Application (PTO-152)
- 6) ☐ Other: \_\_\_\_\_.

### **DETAILED ACTION**

Applicant's arguments filed 12/18/03 have been fully considered but they are not persuasive. Applicant argues that the use of catalyst having a carrier containing titania and alumina in a ratio of between 1/99 and 80/20 shows unexpected results in producing a CO-reduced, hydrogen containing gas. However, as discussed in an interview on 6/17/03, this is not persuasive because the data relied upon to show these unexpected results is not sufficient to support the scope claimed. Furthermore, as in the previous office action, it is expected that the ratio may be within the limits of 1/99 and 80/20, because these represent an immense range of carrier compositions.

The text of those sections of Title 35, U.S. Code not included in this action can be found in a prior Office action.

### ***Claim Rejections - 35 USC § 103***

Claims 6, 8-10, 16-18, and 20 are rejected under 35 U.S.C. 103(a) as being obvious over Yasushi (JP 09-131531).

Yasushi discloses a catalyst, for the removal of CO in hydrogen-containing gas, which consists of ruthenium and an alkali metal and/or alkaline earth metal on a fireproof inorganic oxide carrier. The inorganic oxide carrier may be made of at least one selected from among titania, alumina, etc, or may be combinations of these oxides, such as that of titania-alumina. Yasushi does not specify a limit on the weight ratio of titania to alumina in such a carrier, however it is expected that the ratio may be within the limits of 0.1/99.9 and 90/10, because these represent an immense range of carrier compositions. Furthermore, it would have been obvious to one of ordinary skill at the time of invention to utilize a titania-alumina carrier

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composition within these limits, as doing so is taught to be the optimization of a known process. Additionally, In re Kerkhoven (205 USPQ 1069) holds that it is obvious to combine two compositions each of which is taught by prior art to be useful for same purpose in order to form third composition that is to be used for the very same purpose.

The alkali metal may be chosen from the group consisting of K, Cs, Rb, Na, and Li, and is present in an amount of 0.01-10 %, preferably 0.03-3 % (weight of catalyst). The ruthenium catalyst is applied to the support by contacting the support in catalyst containing solution at between 20-90 °C for between 1 minute and 10 hours, yielding a ruthenium content of between 0.05 and 10 %, preferably 0.3 and 3 % (weight of catalyst). The alkali/alkaline earth metal are also applied to the support by contacting the support in catalyst containing solution at between 20-90 °C for between 1 minute and 10 hours. Regarding claim 7, it would be obvious to one of ordinary skill in the art at the time of invention to apply the catalysts to the carrier simultaneously, given the equivalent treatment processes.

The catalyst is used to remove CO in essentially hydrogen gas, such as reformed gas obtained by reforming the fuel for hydrogen manufacture, and is used for manufacture of the hydrogen content gas for fuel cells [paragraph 0022].

### ***Allowable Subject Matter***

Claim 22 is allowed.

### ***Conclusion***

**THIS ACTION IS MADE FINAL.** Applicant is reminded of the extension of time policy as set forth in 37 CFR 1.136(a).

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A shortened statutory period for reply to this final action is set to expire THREE MONTHS from the mailing date of this action. In the event a first reply is filed within TWO MONTHS of the mailing date of this final action and the advisory action is not mailed until after the end of the THREE-MONTH shortened statutory period, then the shortened statutory period will expire on the date the advisory action is mailed, and any extension fee pursuant to 37 CFR 1.136(a) will be calculated from the mailing date of the advisory action. In no event, however, will the statutory period for reply expire later than SIX MONTHS from the mailing date of this final action.

Any inquiry concerning this communication or earlier communications from the examiner should be directed to Peter J Lish whose telephone number is 571-272-1354. The examiner can normally be reached on 9:00-6:00 Monday through Friday.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Stanley Silverman can be reached on 571-272-1358. The fax phone number for the organization where this application or proceeding is assigned is 703-872-9306.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free).



PL

STUART L. HENDRICKSON  
PRIMARY EXAMINER